

10/526341

DT01 Rec'd PCT/PTC 02 MAR 2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Amended) A remote monitoring system for exterminating ~~pest~~ vermin, comprising:

at least one sensor, installed at a plurality of zones of ~~a subject site~~ a vermin control subject building, for sensing movement of the ~~pest~~ vermin in the each zones, and producing and transmitting ~~detection~~ sensed signals corresponding to the sensed movement;

at least one remote controller, installed at the ~~subject site~~ vermin control subject building, for receiving ~~said detection signals~~ and processing ~~and transmitting the received detection signals~~ the sensed signals to transmit vermin-related information; and

a central control apparatus for receiving the vermin-related information from said at least one remote controller, ~~analyzing and managing the information by the zones and~~ processing the vermin-related information for each zone.

2. (Amended) The system of claim 1, further comprising at least one repeater, installed at the ~~subject site~~ vermin control subject building, for receiving the ~~detection~~ sensed signals and re-transmitting them to ~~the~~ said at least one remote controller.

3. (Amended) The system of claim 1, wherein a transmission of the ~~detection~~ sensed signals between the said at least one sensor and the said at least one remote controller is performed by wireless communication.

4. (Amended) The system of claim 2, wherein ~~the~~ a transmission and ~~the~~ a retransmission of the ~~detection~~ sensed signals ~~among between the~~ said at least one sensor, ~~the~~ said at least one repeater, and ~~the~~ said at least one remote controller are performed by wireless communication.

5. (Amended) The system of claim 2, wherein ~~the~~ a transmission of the ~~detection~~ sensed signals between the said at least one sensor and the said at least one repeater is performed by wire communication, and ~~the~~ a retransmission of the ~~detection~~ sensed signals between the said at least one repeater and the said at least one remote controller is performed by wireless communication.

6. (Amended) The system of claim 1, wherein ~~the~~ said at least one sensor comprises at least one ~~among out of~~ a first sensor for sensing movement of cockroaches, a second sensor for sensing movement of rats, and a third sensor for sensing movement of flying insects.

7. (Amended) The system of claim 1, wherein ~~the~~ said at least one sensor is ~~installed together~~ integrated with a ~~pest~~ vermin control equipment for capturing or killing the ~~pest~~ vermin.

8. (Amended) The system of claim 1, wherein ~~the~~ said at least one sensor is implemented by integrating a heat detector or a movement detector to one selected from a group consisting of an insect luring light, an automatic chemical exposure dispenser, and a luring frame for capturing rodents, ~~integrated with a heat detector or a movement detector.~~

9. (Amended) The system of claim 1, wherein ~~the~~ said at least one remote controller further comprises:

a receiving module for receiving the ~~detection~~ sensed signals from the said at least one sensor;

a ~~detection~~ sensed information processing module for ~~receiving and processing the detection signals, and collecting pest-related information~~ processing the sensed signals received from the receiving module and collecting vermin-related information; and

a transmitting module for transmitting the ~~processed pest-related~~ vermin-related information to the central control apparatus.

10. (Amended) The system of claim 9, wherein ~~the~~ said at least one remote controller further comprises a data input module ~~wherein information related to an origination of the pest is manually inputted from a user or a pest control service technician of the subject site~~ for receiving information related to an outbreak of the vermin from either or both of a user of the vermin control subject building and a vermin control manager, wherein the information is manually inputted by either or both of the user and the vermin control manager.

11. (Amended) The system of claim 9, wherein ~~the~~ said at least one remote controller further comprises:

a transmission time determining module for determining whether to transmit the ~~pest-related~~ vermin-related information immediately or not; and

a memory ~~for capable of~~ temporally storing ~~a process result of the pest-related information for predetermined period until the pest-related information is transmitted, in case that the vermin-related information until the transmission of the vermin-related information in case the transmission time determining module determines~~ determining not to transmit the ~~pest-related~~ vermin-related information immediately.

12. (Amended) The system of claim 1, wherein the central control apparatus further comprises:

~~a pest-related information analyzing module for receiving and analyzing, in each of the zones, the pest-related information transmitted from the remote controller; a pest-related a vermin-related information managing module for, in a form of database, storing, for storing and updating the vermin-related information received from said at least one remote controller, thereby managing the vermin-related information;~~

~~updating and managing the pest-related information transmitted from the remote controller;~~

~~a database managed by the pest-related~~ a database for storing the vermin-related information, which is managed by the vermin-related information managing module; ~~a pest control time determining module for determining whether to perform a pest control work immediately or not on the basis of the analysis result from the pest- and~~

~~related information analyzing module; and a communication module for performing wired/wireless communications.~~ wire/wireless communications.

13. (Amended) The system of claim 12, wherein the central control apparatus further comprises a report producing module for producing a report with respect to the ~~pest-related information.~~ vermin-related information.

14. (Amended) The system of claim 1, wherein ~~the~~ said at least one sensor produces the ~~detection-sensed~~ signals in response to sensing of the ~~pest, and the produced detection-vermin~~ and the sensed signals are transmitted together with an identification ~~signal~~ of each sensor.

15. (Amended) The system of claim 1, wherein ~~the~~ said at least one remote controller transmits the information to the central control apparatus through a public switched telephone network.

16. (Amended) The system of claim 12, wherein the central control apparatus further comprises a location searching module for searching a location of a mobile communication terminal belonging to a vermin control manager, and a vermin-related information analyzing block for analyzing the vermin-related information,

~~the service technician, and wherein~~ the communication module transmits the analysis result of the ~~pest-related~~ vermin-related information to the mobile communication terminal searched by the location searching module.

17. (Amended) The system of claim ~~9,11~~, wherein ~~the~~ said at least one remote controller further comprises:

~~a pest-related~~ a vermin-related information analyzing module for ~~receiving and analyzing~~ the ~~pest-related~~ vermin-related information ~~transferred from the detection received from the~~ sensed information processing module;

~~a pest-related~~ a vermin-related information managing module for ~~storing, updating and managing the result analyzed at the pest-related~~ storing in the memory at least part of the vermin-related information and the analysis result of the vermin-related information analyzed by the vermin-related information analyzing module; and module and updating the stored information, thereby managing the information; and

a terminal connecting module for transmitting the analysis result of the ~~pest-related~~ vermin-related information from the memory to ~~the~~ a mobile communication terminal, when the mobile communication terminal is connected to the terminal connecting module.

18. (Amended) The system of claim ~~16 or 17~~, wherein the mobile communication terminal is a personal digital assistant (PDA).

19. (Amended) The system of claim ~~12,17~~, wherein the ~~pest-related~~ vermin-related information analyzing module ~~decides grade of~~ determines grades for each sensor on the basis of population of the sensed vermin, and

~~detected pest, and the pest~~ the remote controller further includes a vermin control time

determining module ~~determines a pest control time of each zone on the basis of each graded sensor.~~ that determines a vermin control time of zones on the basis of the grade of each sensor, and each zone where said each sensor is installed.

20. (Amended) The system of claim 11, wherein the transmission time determining module ~~transmits the pest-related~~ determines to transmit the vermin-related information at a predetermined time when cockroaches and/or flying insects are ~~detected, and sensed, and to~~ transmit immediately ~~transmits the pest-related~~ the vermin-related information when rats are ~~detected, sensed.~~

21. (Amended) The system of claim 1, wherein ~~the said at least one~~ sensor and ~~the said at least one~~ remote controller periodically check a status including a ~~mechanical~~ breakdown and transmit information related to the checked status to the central control apparatus.

22. (Amended) A remote monitoring method for exterminating ~~pest, vermin,~~ comprising the steps of:

sectioning a vermin control subject site-building into a plurality of zones;

collecting ~~pest-related~~ vermin-related information by sensing ~~pest in~~ active at vermin in each of the sectioned zones;

transmitting the collected ~~pest-related~~ vermin-related information to a central control apparatus;

analyzing the ~~pest-related information transmitted;~~ transmitted vermin-related information;

updating and storing the analyzed ~~pest-related~~ vermin-related information by comparing it with pre-stored information in a database; and

determining a ~~pest-vermin~~ control time on the basis of the analyzed ~~pest-related information.~~ vermin-related information.

23. (Amended) The method of claim 22, further comprising the step of producing a report by using the analyzed ~~pest-related information.~~ vermin-related information.

24. (Amended) The method of claim 22, wherein the sectioning step ~~sections the subject site~~ includes sectioning the vermin control subject building into a plurality of physical zones.

25. (Amended) The method of claim 22, wherein the sectioning step ~~sections zones of the subject site~~ includes sectioning the vermin control subject building into zones on the basis of a function of each zone.

26. (Amended) The method of claim ~~24 or 25~~, 22, wherein the sectioning step ~~sections each area of the subject site into a minimum unit by which a pest control is to be performed.~~ includes sectioning the vermin control subject building into zones of minimum unit on which a vermin control work is to be performed.

27. (Amended) The method of claim 24, wherein the sectioning step further comprises the steps of:

sectioning the vermin control subject site ~~into building into individual~~ buildings and their outer ~~blocks~~ areas; and  
sectioning the vermin control subject building into floors.

28. (Amended) The method of claim 26, further comprising the step of assigning a code to each ~~minimum unit, and said analyzing of the pest-related information comprises the step of arranging the pest-related~~ zone of minimum unit,

wherein the step of analyzing the vermin-related information comprises,  
arranging the vermin-related information according to the codes assigned to the plurality of zones sectioned in the subject site. ~~zones;~~ and  
searching a vermin-related information that is out of a predetermined range when compared to the other information arranged for the same code.

29. (Amended) The method of claim 22, wherein the ~~pest-related~~ vermin-related information is transmitted at a predetermined time.

30. (Amended) The method of claim 22, wherein the ~~pest-related~~ vermin-related information is transmitted at a predetermined time when cockroaches or flying insects are ~~detected,~~ sensed, and immediately transmitted when rats are ~~detected.~~ sensed.

31. (Amended) The method of claim ~~28 or~~ 29, wherein the predetermined time is nighttime.

32. (Amended) The method of claim 22, further comprising the step of transmitting the ~~pest-related~~ vermin-related information to at least one ~~service technician by wireless communication,~~ vermin control manager by wireless communication.

33. (Amended) The method of claim 22, wherein the analyzing of the ~~pest-related information is a step of obtaining the number of pest appearance and captured pest according to locations in the subject site, times of a certain day, and categories of pest to be exterminated.~~ vermin-related information includes the step of determining population of appearing and captured vermin according to one or more categories including locations in the vermin control subject building, time periods, and the type of vermin.

34. (Amended) The method of claim 22, further comprising the step of transmitting the ~~pest-related~~ analyzed vermin-related information to a mobile communication terminal belonging to a ~~service technician,~~ vermin control manager.

35. (Amended) The method of claim 33, wherein the analyzed ~~pest-related~~ vermin-related information is transmitted to the mobile communication terminal together with information ~~on a shortest path to the subject site.~~ of a shortest route from the vermin control manager to the vermin control subject building.

36. (Amended) The method of claim 22, further comprising the steps of:  
searching for a location of a ~~service technician;~~ and vermin control manager; and  
transmitting the analyzed ~~pest-related~~ vermin-related information to a mobile communication terminal ~~of the service technician,~~ belonging to the vermin control manager.

37. (Amended) The method of claim 22, further comprising the step of transmitting the collected ~~pest-related~~ vermin-related information to a mobile communication terminal ~~of a service technician,~~ belonging to a vermin control manager.

38. (New) The system of claim 1, wherein the vermin-related information analyzing module includes means for determining the number of vermin appearing or captured according to one or more categories including the locations in the vermin control subject building, time period, and the type of vermin.

39. (New) The system of claim 1, wherein the central control apparatus further comprises:

a vermin-related information analyzing module for analyzing the vermin-related information; and

a vermin control time determining module for determining whether to perform a vermin control work immediately or not on the basis of the analysis result from the vermin-related information analyzing module.

40. (New) The system of claim 21, wherein the remote controller includes means for repeatedly transmitting a predetermined number of times the information related to the checked status including a breakdown.

41. (New) The system of claim 17, wherein the mobile communication terminal is a personal digital assistant (PDA).

42. (New) The method of claim 30, wherein the predetermined time is nighttime